NOFO INFORMATION SHEET FOR THE "JOINT TECHNOLOGY TRANSFER INITIATIVE" FY2020 COMPETITION

Information about the JTTI Program:

National Oceanic and Atmospheric Administration (NOAA) collaborates with the American Weather Enterprise on cooperative research activities and provides financial support to transition weather technologies from the American Weather Enterprise to NOAA's National Weather Service (NWS) operations through several funding programs. The Joint Technology Transfer Initiative (JTTI), created by the United States Congress in 2016, is one such program to accelerate the transition of matured weather research to NWS operations. The mission of the JTTI is to ensure continuous, cost effective development and transition of the latest scientific and technological advances into NWS operations. Within NOAA's Office of Atmospheric and Oceanic Research (OAR), the Office of Weather and Air Quality (OWAQ) manages and implements the JTTI program in close collaboration with the NWS.

Through this Joint Technology Transfer Initiative (JTTI) announcement, OWAQ/OAR/NOAA is seeking proposals to support further development, testing and evaluation of mature weather research that has potential for improving NOAA's Unified Forecast System capabilities (UFS link here).

Projects that are suitable for the JTTI program are matured enough that can transition to NOAA operations within the next 3-5 years. As such, projects that are most suitable for this competition are at Readiness Level (RL) 4 or above which mean the concept has already been developed and validated in their own or laboratory environment and ready to be tested in the NOAA environment. Prototype development suitable for UFS is allowed. As per NAO 216-105B, NOAA uses Readiness Levels to track the progress of the Research to Operations transition projects. For a full description of NOAA Readiness Levels, investigators are directed to Appendix A of the NOFO for this competition and announcement in Section I.A "Program Objectives" of this NOFO. Investigators are encouraged to assign the appropriate RL for their project. Note that projects that are in exploratory stage or addressing basic research (RLs less than 4) are not suitable for the JTTI competition. They may be suitable for other competitions of the associated NOFO.

Information on JTTI Program Priorities:

This year's JTTI priorities focused on three main themes: improved methods for incorporating data into forecast modeling and for model coupling to improve weather forecast operations; testing for the coupled UFS; and improved forecasts of extreme weather and high impact weather events. Detailed program priorities are identified in the Program Priorities (Section I.B) of the associated NOFO. The focus of spatial scales is from regional to global and time scales is from sub-hourly to the sub-seasonal. This year, new priorities focused on Artificial Intelligence/Machine Learning techniques to post-process ensemble weather model data sets, data fusion, QA/QC and Data assimilation and verification are introduced.

The final outcome of the projects must be targeted to transition to the UFS (link to UFS) or MET+ tools. Projects must address one of the priorities listed in the priorities section (I.B) of the NOFO and must be at Readiness Level 4 or above. Any projects that use observational data (whether in situ or remotely sensed radar or satellite) must be available to NOAA operations. Projects that utilize non-NOAA operational data cannot be transitioned to NOAA operations, hence are not eligible for funding under this program.

Information on Testing and Evaluation:

As mentioned before, JTTI is a research to operations transition program. Typically, good transition projects progress through development, demonstration and deployment phases. Projects must have a good test and evaluation plan to demonstrate the value of the outcome of the project to the community. Investigators are highly encouraged to contact the respective testbed managers to assess the suitability of the project to test in that particular testbed. If the investigators plan on testing in one of the NOAA testbeds, they must identify and provide in the proposal the cost associated with this testing (work with the testbed managers to identify this cost), but DO NOT INCLUDE THIS IN THE PROPOSAL BUDGET. If the proposal is successful, these funds will be provided to the testbed through a NOAA internal funding mechanism. If the proposal is funded, PIs are required to develop a test plan in coordination with the testbed manager within six months of the start of the project. Successful transition projects will be assigned a Point of Contact from the NWS to guide PIs through the transition process. The PIs, in coordination with the NWS POC, are also required to develop a high level research-to-operations transition plan within the first six months of the project start date.

Although the deployment phase of the project is not part of this funding call, the projects must have an end goal where the outcome of the project will be implemented. Investigators must identify the receiving office in the NWS where the outcome of this project will be implemented. As such, investigators are highly encouraged to collaborate with the NWS scientists. Investigators are highly encouraged to identify a clear transition path with demonstration of the value of the products through evaluation in one of the testbeds or other evaluation mechanism and a receiving office in the NWS with collaborators from NWS.

Guidance on Proposal Evaluation:

Investigators should understand that Joint Technology Transfer Initiative (JTTI) is a program that is intended to accelerate those projects that are aligned with one or more of the current program priorities (as identified in the NOFO) to a funding end-state where if the project results in a proposed transition of output to NOAA UFS or MET+ Tools. During the review process, reviewers will focus, among other evaluation criteria, on a project's transition ability after funding has expired, how the final deliverable(s) would serve to better the weather community and the public it serves as a whole, and if the final product would fit within the framework of the UFS. It is in the best interest of the principal investigators, then, to demonstrate in their proposal how their project meets those goals. Those projects not demonstrating a

strong possibility of transition to operations after funding ends, or supporting a concept that is hyper-localized (i.e. “stovepiping”) will not be rated highly by reviews.

In order for project investigators to understand the needs and environments of the weather enterprise, investigators are encouraged to form collaborations with an operational center, especially those within the National Weather Service where a project’s final product could be housed if selected for transitioning after funding completion. This collaboration should be supported with evidence, such as a signed letter of support or the inclusion of a staff member as a non-paid collaborator, pursuant to the eligibility requirements described in the NOFO. The importance of this operational collaboration is seen throughout the evaluation criteria that reviewers will use to grade an incoming application. If there are plans to utilize a testbed for project demonstration/collaboration purposes, principal investigators are required to state their intentions clearly in their statement of work.